



BUILDING AND NEIGHBORHOOD COMPLIANCE DEPARTMENT (BNC)
BOARD AND CODE ADMINISTRATION DIVISION

MIAMI-DADE COUNTY
PRODUCT CONTROL SECTION
11805 SW 26 Street, Room 208
Miami, Florida 33175-2474
T (786) 315-2590 F (786) 315-2599

www.miamidade.gov/building

NOTICE OF ACCEPTANCE (NOA)

Thybar Corporation
913 South Kay Avenue
Addison, IL 60101

SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed by Miami-Dade County Product Control Section and accepted by the Board of Rules and Appeals (BORA) to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Section (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. BORA reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Section that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein, and has been designed to comply with the High Velocity Hurricane Zone of the Florida Building Code.

DESCRIPTION: TC-5 Series Steel Roof-Curb for Trane Rooftop Units

APPROVAL DOCUMENT: Drawing No. RC10260.idw, titled "Roofcurb by Thybar Corporation", sheets 1 through 5 of 5, prepared by Paul Selman, P.E., dated February 19, 2010, last revision #4 dated January 11, 2011, signed and sealed by Paul Selman, P.E., bearing the Miami-Dade County Product Control Approval stamp with the Notice of Acceptance number and the approval date by the Miami-Dade County Product Control Section.

MISSILE IMPACT RATING: None

LABELING: Each roof-curb shall bear a permanent label with the manufacturer's name or logo, Addison, IL; Farmers Branch, TX; Akron, OH; Louisville, KY; or McCarran, NV and the following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

RENEWAL of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

INSPECTION: A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA consists of this page 1, evidence submitted page E-1 as well as approval document mentioned above. The submitted documentation was reviewed by **Helmy A. Makar, P.E., M.S.**



Helmy A. Makar
02/10/2011

NOA No. 10-0317.03
Expiration Date: 02/10/2016
Approval Date: 02/10/2011
Page 1

Thybar Corporation

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

A. DRAWINGS

1. *Drawing No. RC10260.idw, titled "Roofcurb by Thybar Corporation", sheets 1 through 5 of 5, prepared by Paul Selman, P.E., dated February 19, 2010, last revision #4 dated January 11, 2011, signed and sealed by Paul Selman, P.E.*

B. TESTS

1. *None.*

C. CALCULATIONS

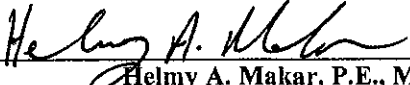
1. *Calculation titled "146 MPH Wind Load Calculation", dated November 19, 2010, 1 sheet, signed and sealed by Paul J. Selman, P.E.*
2. *Calculation titled "146 MPH Wind Load FBC 2007", dated February 25, 2010, sheets 1 through 90 of 90, signed and sealed by Paul J. Selman, P.E.*

D. QUALITY ASSURANCE

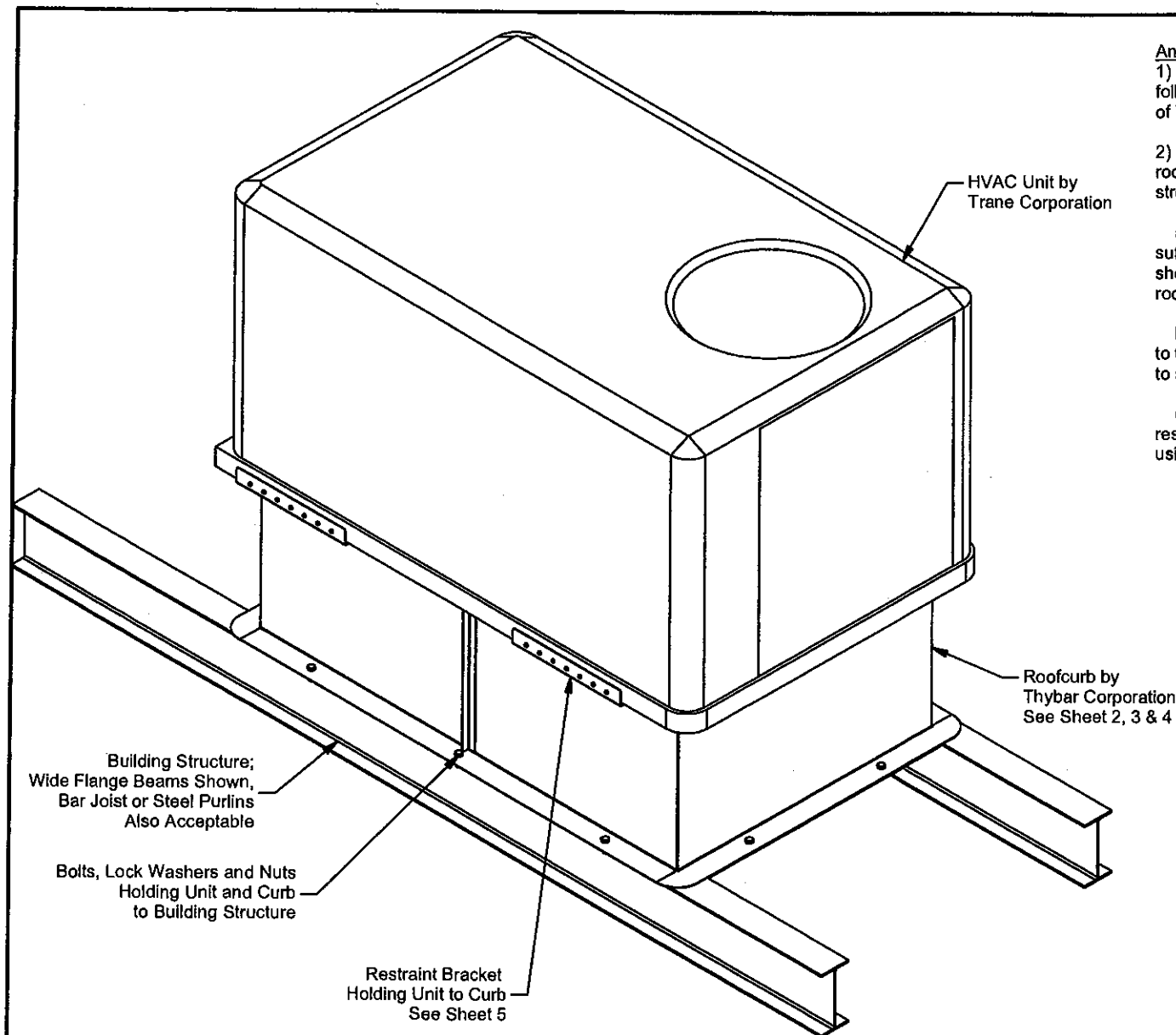
1. *By Miami-Dade County Building and Neighborhood Compliance Department.*

E. MATERIAL CERTIFICATIONS

1. *None.*



Helmy A. Makar, P.E., M.S.
BNC, Product Control Unit Supervisor
NOA No. 10-0317.03
Expiration Date: 02/10/2016
Approval Date: 02/10/2011



Analysis:

1) The design wind load for a rooftop-mounted HVAC unit was determined following the requirements of FBC2007 Section 1609.1.1 and Section 6.5.15 of The American Society of Civil Engineers Standard 7 (ASCE7-05).

2) Static analysis was used to ensure that all components between the rooftop-mounted HVAC unit and the building structure are of sufficient strength.

a) The load path from the rooftop equipment to the building structure is of sufficient strength to keep the equipment in place while resisting the tension, shear, moment and uplift forces generated by the wind force acting on the rooftop equipment.

b) The rooftop unit restraints, the roofcurb wall and the curb attachments to the building structure were all designed and manufactured with the ability to safely transfer the wind-generated force into the building structure.

c) The restraint bracket quantity shown is conceptual only. Quantity of restraint brackets required is to be determined by project specific calculations using bracket capacities shown on sheet 5.

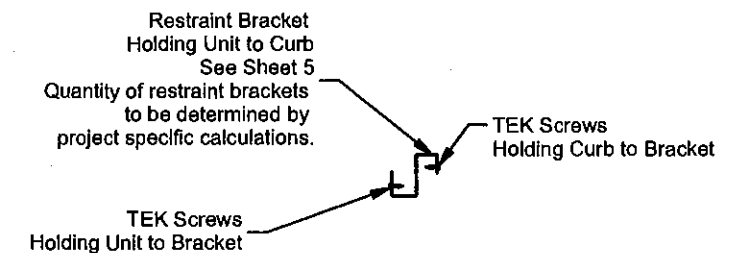
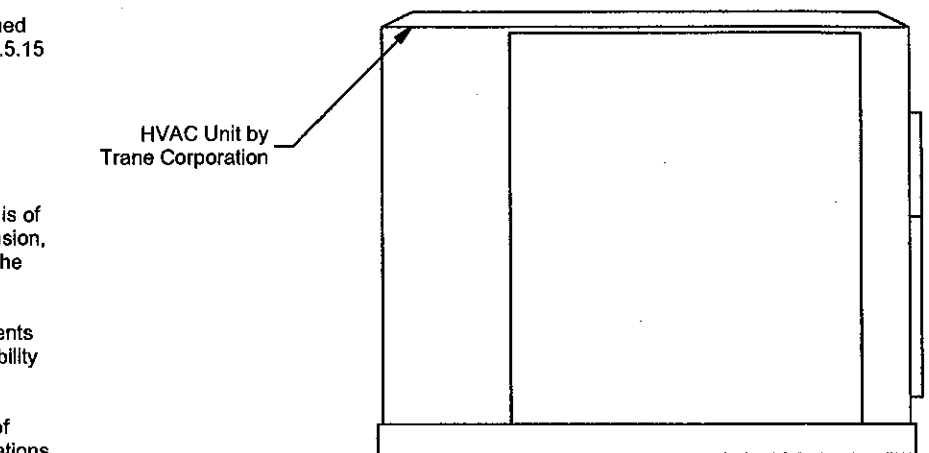
Approved as complying with the
Florida Building Code

Date 02/16/2011

NOA# 10-0317-03

Miami Dade Product Control

By *Heating A. Makar*



Sealing of roofing material to roof curb nailer is not part of this application. Roofing material should be addressed by approved NOA for each project.

Bolts Holding Unit And Curb to Building Structure

Nuts & Lock Washers Holding Unit And Curb to Building Structure

Building Structure; Wide Flange Beams Shown, Bar Joist or Steel Purlins Also Acceptable

Exploded End View

This Notice of Acceptance application is limited to the attachment of the HVAC unit to the roof curb, the roof curb itself and the attachment of the roof curb to the roof structure.

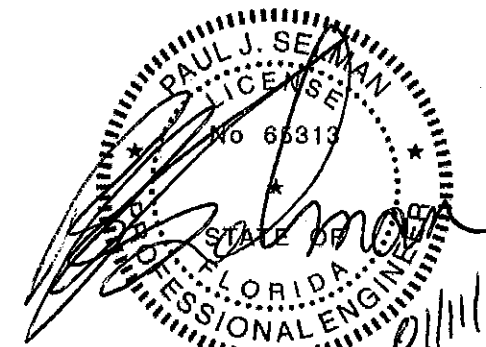
Therefore, the restraint system shown in these drawings will be acceptable for all Trane units with the following model numbers:

YSC036E-060E, YHC036E, TSC036E-060E, THC036E, WSC036E-048E, YSC072E-120E, YHC048E-072E, TSC072E-120E, THC048E-072E, YHC092E-120E, THC092E-120E

General Notes:

1) These drawings provide a method of attachment so that a Trane Corporation manufactured HVAC unit will be able to resist the force generated by a 146MPH wind when the unit is installed on a Thybar Corporation manufactured roofcurb as required by the latest version of the Florida Building Code (FBC).

2) The following analysis is being submitted to the Miami-Dade County Product Control Division for review and consideration in assigning a Notice of Acceptance (NOA) for Trane units installed on Thybar Corporation roofcurbs and restraint brackets.



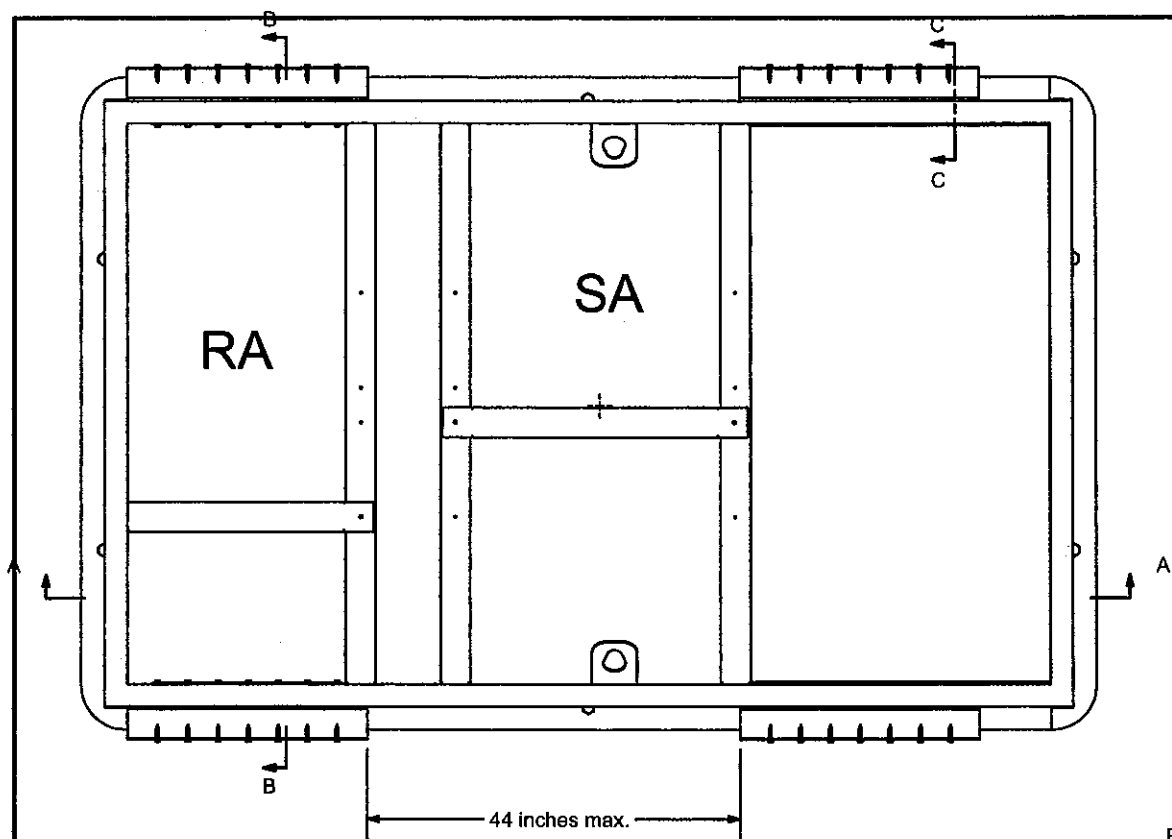
Paul Selman Florida P.E. 65313
913 S Kay Avenue
Addison IL 60101
November 19, 2010

Florida DWS 146mph FBC Roof Curb Uninsulated

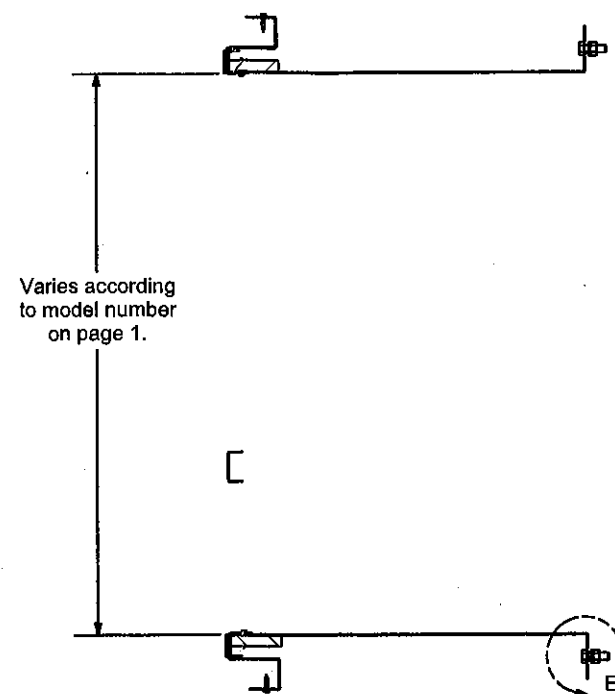
REVISION HISTORY			
REV	DESCRIPTION	DATE	BY
1	Per H. Makar Comments	6/16/2010	TAmbrosini
2	Per H. Makar Comments	7/28/10	PSelman
3	Per H. Makar Comments	11/19/10	PSelman
4	Per H. Makar Comments	1/11/11	TAmbrosini
Thybar Corporation			
Qty:	Job #:	Tag:	
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	ThyCurb
	Sheet 1 of 5

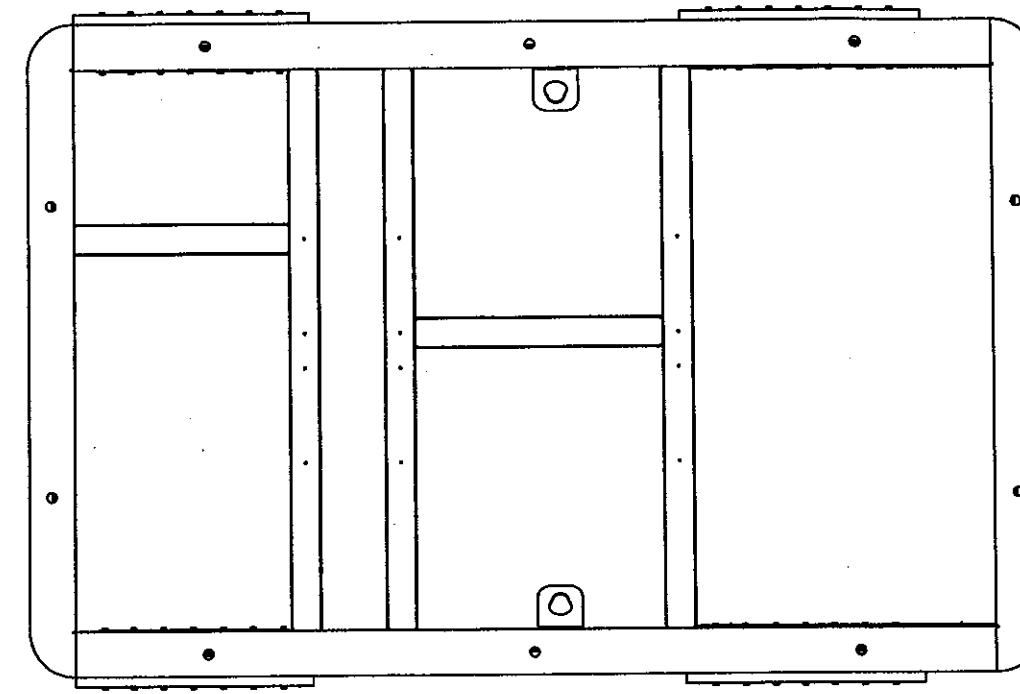
ThyCurb
Sheet 1 of 5



Plan view



SECTION B-B



Bottom View

Restraint bracket quantity to be determined by project specific calculations.

(7) #10 TEK Screws Per Restraint Bracket. 2" O.C. Spacing Holding Restraint Bracket to Roof Curb

HVAC Unit Baseraill

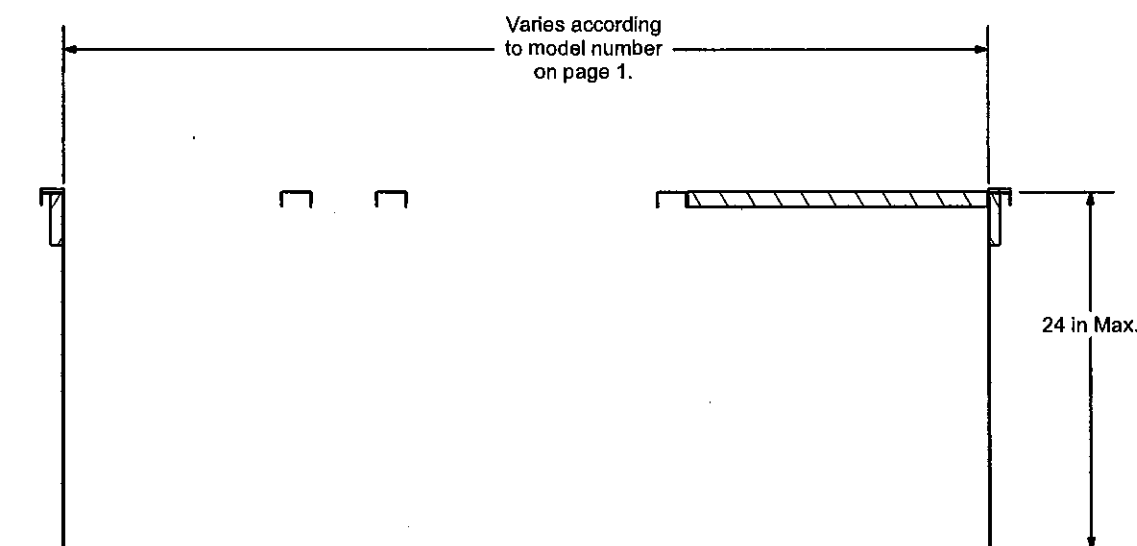
(7) #10 TEK Screws Per Restraint Bracket. 2" O.C. Spacing Holding HVAC Unit to Restraint Bracket

DETAIL D

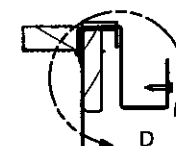
(10) 1/2"Ø A307 through bolts per curb, (3) on each curb long side and (2) on each curb short side, holding roof curb to building structure.

Structural steel (Typ) Provided By Others

DETAIL E



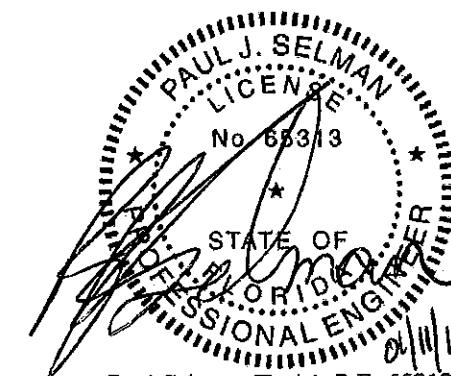
SECTION A-A



SECTION C-C

Prime Galv Steel 14 Ga. Curb Wall


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By *Helmy A. Helmy*



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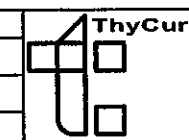
Send 25 ft. of 1/4 x 1 1/2 Gasketing/Curb
Florida DWS 146mph FBC Roof Curb Uninsulated

Thybar Corporation			
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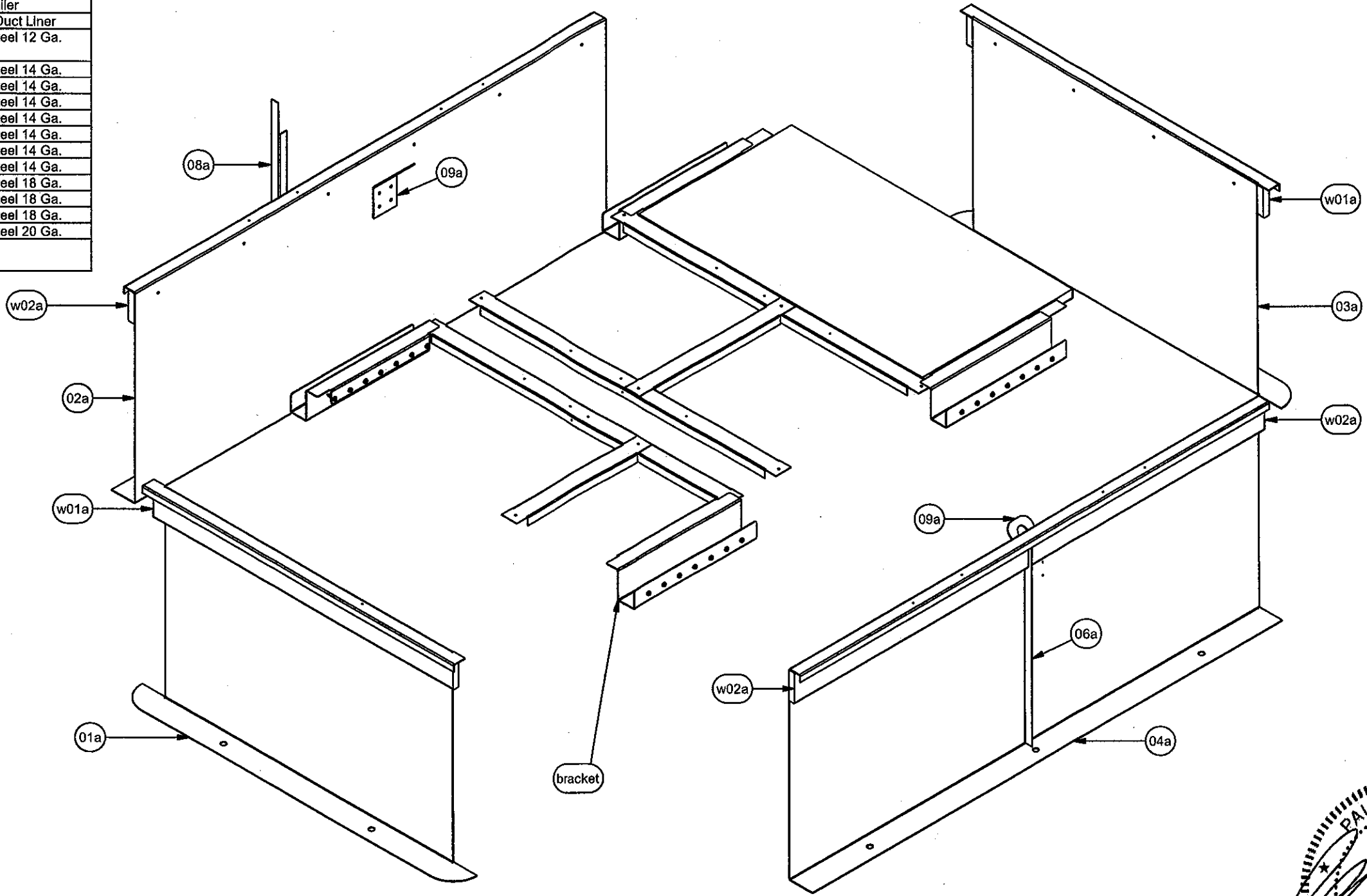
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Sheet 2 of 5



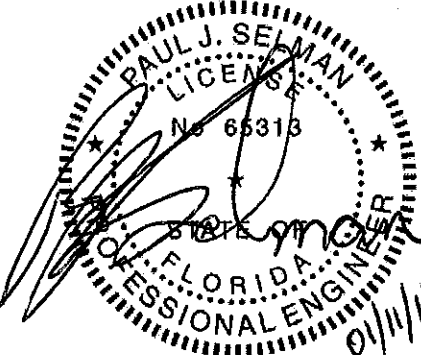
Sheet 2 of 5

Part	Description	Material
w01a	end nailer	1X4 Wood Nailer
w02a	side nailer	1X4 Wood Nailer
TR5DS00512-D01		Insulation 1" Duct Liner
09a	(4) #10 Tex screws per lifting plate	Prime Galv Steel 12 Ga.
01a	curb wall 1	Prime Galv Steel 14 Ga.
02a	curb wall 2	Prime Galv Steel 14 Ga.
03a	curb wall 3	Prime Galv Steel 14 Ga.
04a	curb wall 4	Prime Galv Steel 14 Ga.
06a	angle stiffener 2	Prime Galv Steel 14 Ga.
08a	angle stiffener 4	Prime Galv Steel 14 Ga.
bracket	Restraint Bracket	Prime Galv Steel 14 Ga.
TR5DS00512-03	SUPPLY CHANNEL	Prime Galv Steel 18 Ga.
TR5DS00512-02	RETURN CHANNEL	Prime Galv Steel 18 Ga.
TR5DS00512-01	CHANNELS	Prime Galv Steel 18 Ga.
TR5DS00512-04	RECESSED PAN	Prime Galv Steel 20 Ga.
10-16x1 self drilling	Hex washer Head Zinc	Screw
	10-16x1 self drilling	



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By *Heung A. Heun*

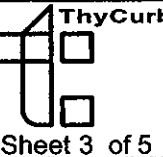


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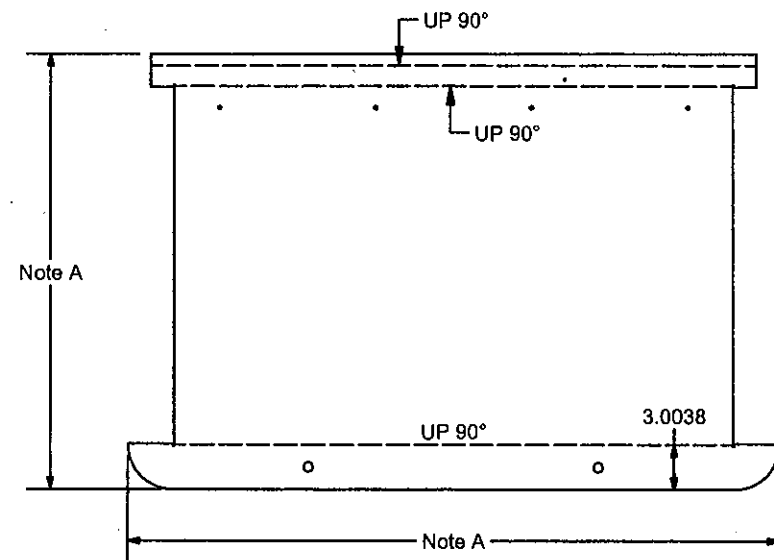
Florida DWS 146mph FBC Roof Curb Uninsulated

Thybar Corporation			
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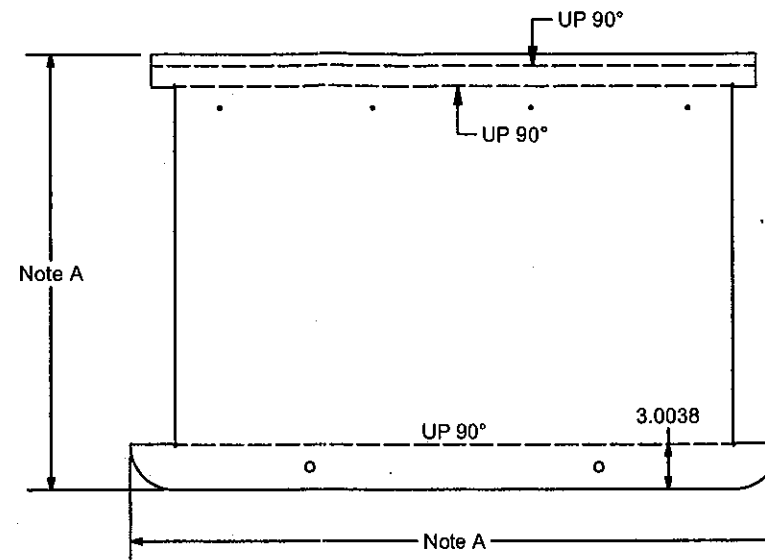
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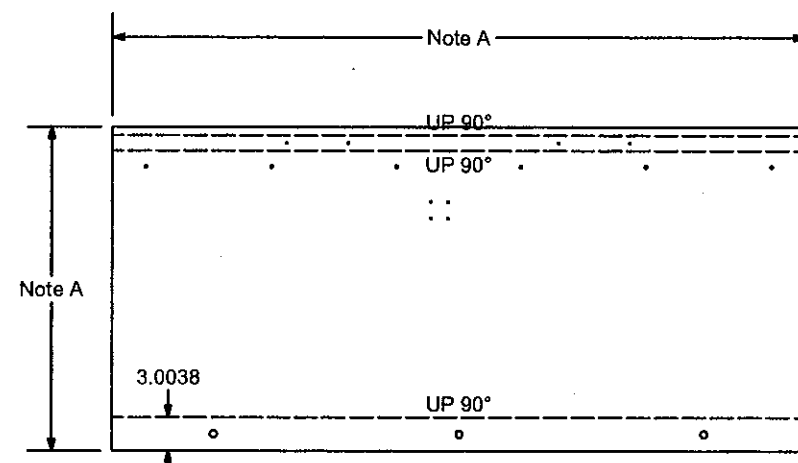
Sheet 3 of 5



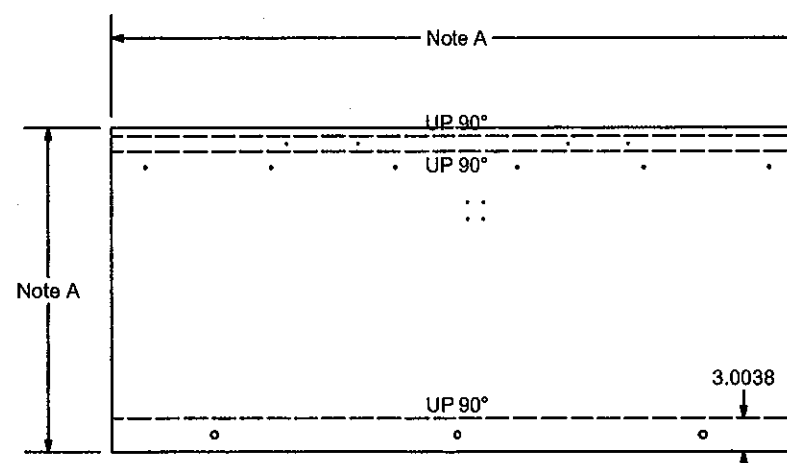
01a - 1



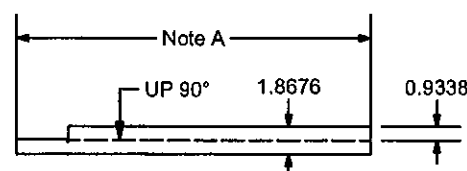
03a - 1



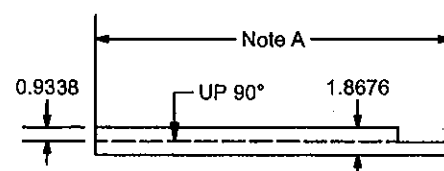
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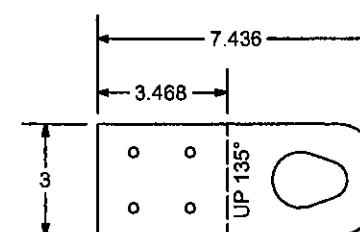
04a - 1



06a - 1



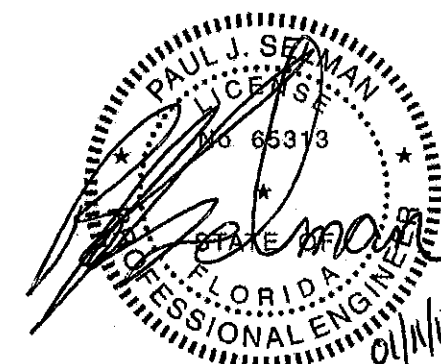
08a - 1



09a - 2

Note A
Varies according to
model number on page 1.


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By *Heather A. Miller*



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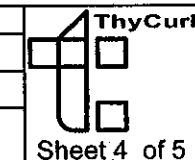
Florida DWS 146mph FBC Roof Curb Uninsulated

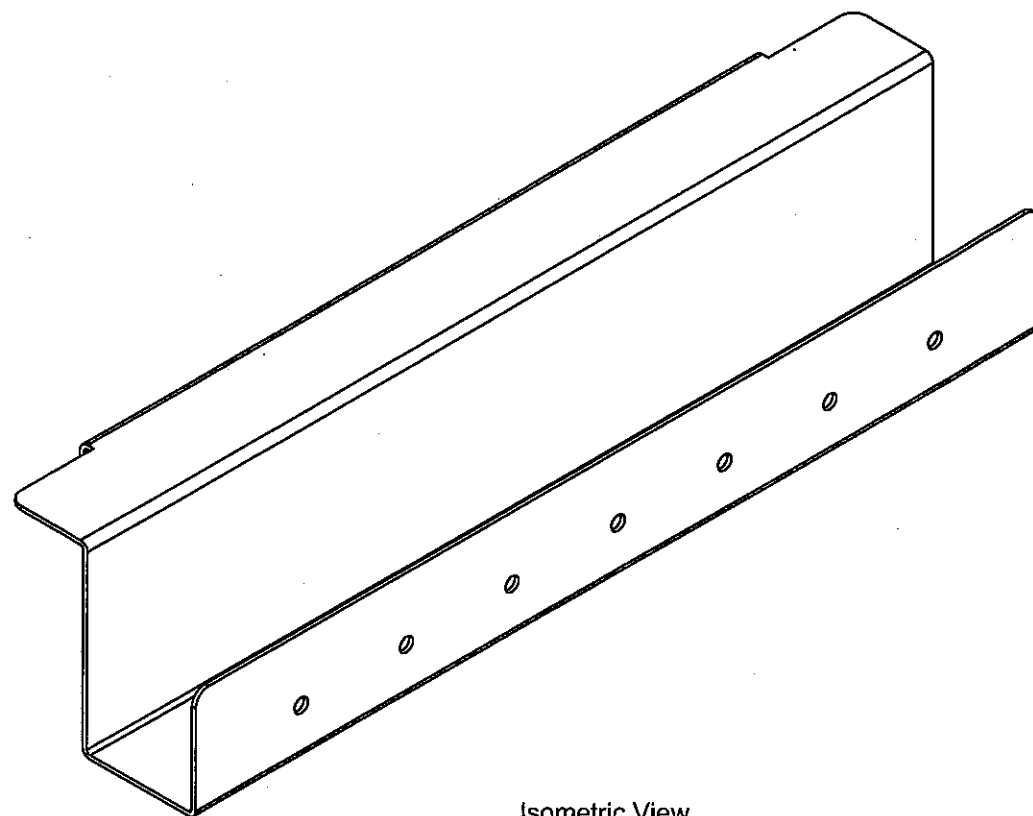
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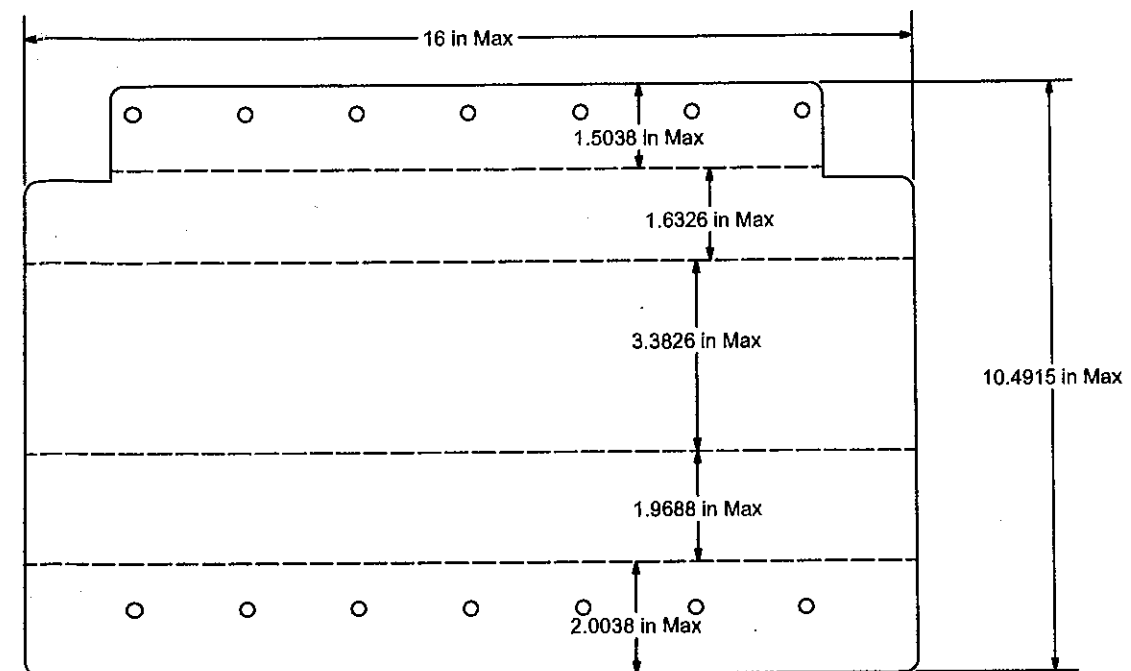
Thybar Corporation

Sheet 4 of 5





Isometric View



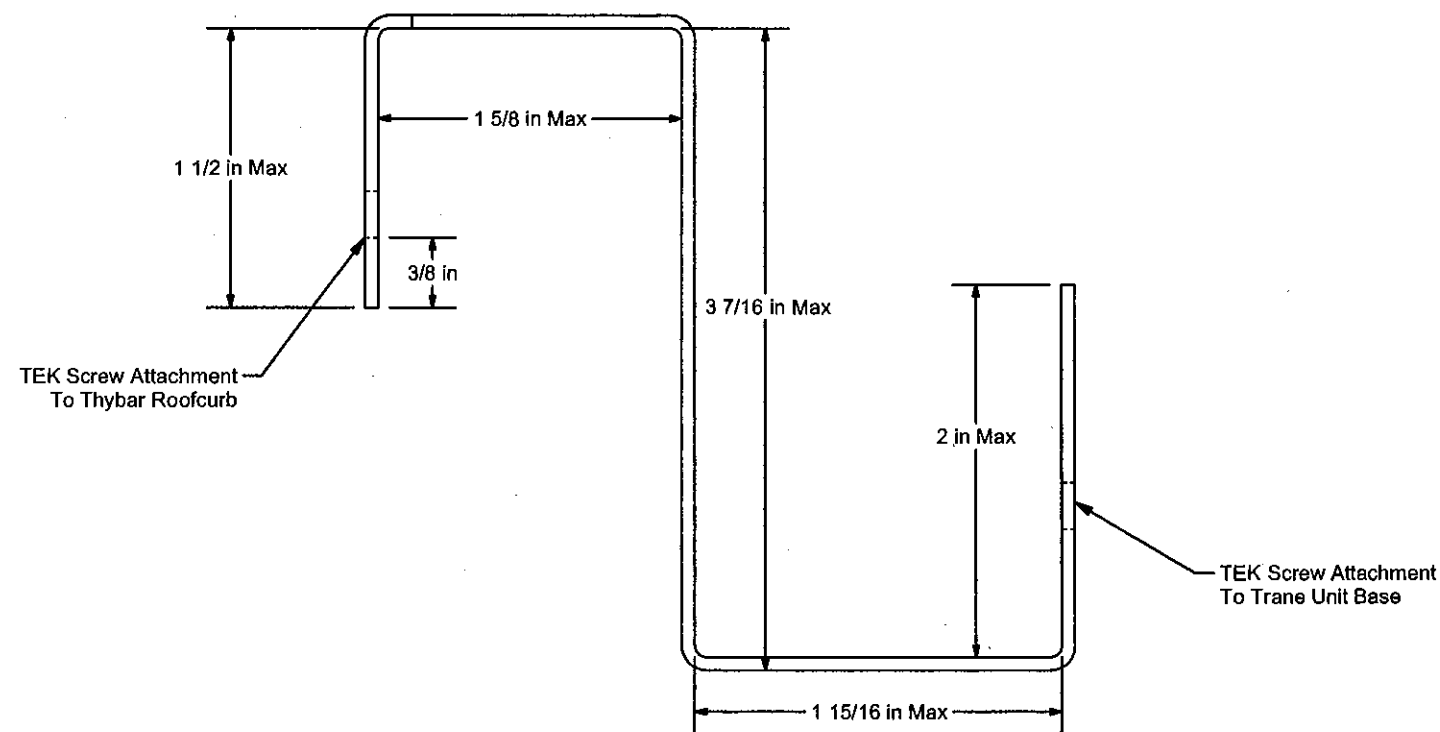
Flat Pattern

Restraint bracket capacity

Bracket capacity is the minimum of bracket shear and tensile capacities with a factor of safety = 2.0.
 5,270=minimum of 8,445 and 5,270
 5,270 / 2 Factor of Safety = 2,635 lb

Restraint bracket quantity

Restraint bracket quantity is determined by project specific calculations that consider the unique combination of unit, curb and location. 4 brackets (min.) per curb.



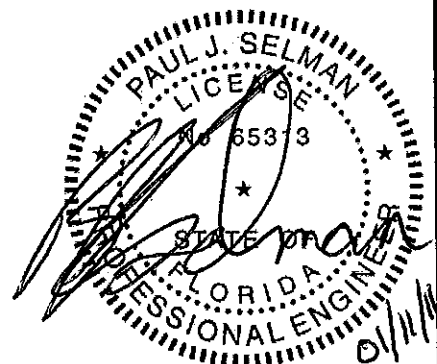
Formed View

Florida DWS 146mph FBC Roof Curb Uninsulated


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Paul Selman



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Thybar Corporation				 ThyCurb
Qty:	Job #:	Tag:		
Dwg. RC10260.idw		By: Mike Lissak	Date: 2/19/2010	
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Sheet 5 of 5				

